Aluminum Electrolytic Capacitors

RoHS

HTK Series
(Wide Temperature Range)

MERITEK

FEATURES

- High temperature 105°C and high reliability

SPECIFICATIONS

Item	Characteristic														
Operating Temp Range	-55 ~ +105°C			-40 ~ +105°C						-25 ~ 105°C					
Rated Working Voltage	6.3 ~ 100VDC			160 ~ 400VDC						450VDC					
Capacitance Tolerance (120Hz 20°C)	± 20%(M)														
Leakage Current (20°C)	6.3 ~ 100VDC I ≤ 0.01CV or 4 (μA)								160 ~ 450VDC I ≤ 0.03CV + 40 (μA) max						
	∗**Whichever is greater after 3 minutes** **I : Leakage Current (μA) C : Rated Capacitance(μF) V : Working Voltage (V)**														
Surge Voltage (20°C)	**W.V.**	**6.3**	**10**	**16**	**25**	**35**	**50**	**63**	**100**	**160**	**200**	**250**	**350**	**400**	**450**
	S.V.	8	13	20	32	44	63	79	125	200	250	300	400	450	500
Dissipation Factor (tan δ) (120Hz 20°C)	add 0.02 per 1000uF for more than 1000uF														
	W.V.	**6.3**	**10**	**16**	**25**	**35**	**50**	**63**	**100**	**160**	**200**	**250**	**350**	**400**	**450**
	tan δ	0.24	0.20	0.17	0.15	0.12	0.10	0.10	0.08	0.15	0.15	0.15	0.20	0.20	0.20
Low Temperature Stability	Impedance ratio at 120Hz														
	Rated Voltage (V)	**6.3**	**10**	**16**	**25**	**35 ~ 100**			**160 ~ 250**			**350 ~ 400**		**450**	
	-25°C / +20°C	4	3	2	2	2			3			6		15	
	-40°C / +20°C	10	8	6	4	3			4			10		-	
Load Life	**After 2000 hours application of W.V. and +105°C ripple current value** , the capacitor shall meet the following limits. (DC + ripple peak voltage ≤ rated working voltage)														
	Capacitance Change	≤ ±25% of initial value for 6.3 ~ 16 W.V. , ≤ ±20% of initial value for 25 ~ 450 W.V.													
	Dissipation Factor	≤ 200% of initial specified value													
	Leakage Current	≤ initial specified value													
Shelf Life	At +105°C no voltage application after 1000 hours the capacitor shall meet the limits for load life characteristics. (with voltage treatment)														

PART NUMBER SYSTEM

HTK 100V 101 M TA 10x20

Meritek Series

Rated Voltage

Capacitance
Express in micro farad(uF), First two digits are significant figures, Third digit denotes number of zeros. 'R' denotes decimal point for values less than 10uF

Tolerance
M - ±20%

Package

Code	TA	TR	Blank
	Tape & Ammo	Tape & Reel	

Case size – (D) Diameter x (L) Length in mm (Optional)

RIPPLE CURRENT COEFFICIENTS

Temperature(°C)	65	85	105
Multiplier	1.75	1.40	1.00

Frequency(Hz)	60	120	1K	≥ 10k
W.V.	Multiplier			
6.3~25V	0.85	1.00	1.10	1.20
35~100V	0.80	1.00	1.15	1.25
160~250V	0.75	1.00	1.25	1.40
350~450V	0.70	1.00	1.30	1.80

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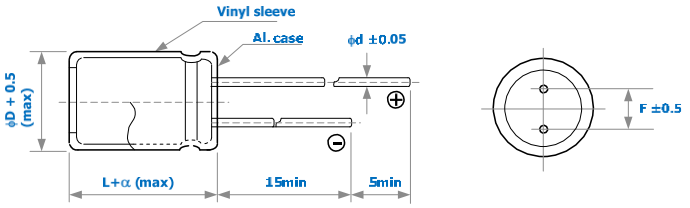
DIMENSIONS (mm)

φD	5	6.3	8	10	12.5	16	18	20	22	25
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0	12.5
d	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8	1.0	1.0
α	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0



CASE SIZE & MAX RIPPLE CURRENT

Case size : DxL (mm)
Max. ripple current : mA(rms) 105°C 120Hz

Cap. (uF)	V / Item	6.3		10		16	
		DxL	R.C.	DxL	R.C.	DxL	R.C.
47					→	5x11	90
100		5x11	110	5x11	120	5x11	130
220		5x11	160	5x11	180	6.3x11	220
330		6.3x11	220	6.3x11	250	8x11.5	310
470		6.3x11	270	6.3x11	290	8x11.5	370
1000		8x11.5	460	10x12.5	530	10x16	630
2200		10x16	760	10x20	910	12.5x20	1050
3300		10x20	990	12.5x20	1140	12.5x25	1340
4700		12.5x20	1200	12.5x25	1420	16x25	1510
6800		12.5x25	1500	16x25	1600	16x31.5	1860
10000		16x25	1660	16x35.5	2040	18x35.5	2270
15000		16x35.5	2140	18x35.5	2370	20x40	2550
22000		18x40	2590	20x40	2830	22x50	3380
33000		22x50	3390	22x50	3470	25x50	3790

Cap. (uF)	V / Item	25		35		50	
		DxL	R.C.	DxL	R.C.	DxL	R.C.
0.1					→	5x11	5
0.22					→	5x11	8
0.33					→	5x11	10
0.47					→	5x11	12
1					→	5x11	17
2.2					→	5x11	25
3.3					→	5x11	31
4.7					→	5x11	36
10		5x11	43	5x11	49	5x11	55
22		5x11	65	5x11	70	5x11	80
33		5x11	80	5x11	90	5x11	95
47		5x11	95	5x11	110	6.3x11	130
100		6.3x11	160	6.3x11	170	8x11.5	220
220		8x11.5	270	8x11.5	300	10x12.5	350
330		8x11.5	330	10x12.5	390	10x16	480
470		10x12.5	420	10x16	520	10x20	630
1000		10x20	740	12.5x20	890	12.5x25	1070
2200		12.5x25	1220	16x25	1350	16x35.5	1700
3300		16x25	1420	16x35.5	1810	18x35.5	2060
4700		16x31.5	1740	18x35.5	2110		
6800		18x35.5	2170				
10000		20x40	2610				
15000		22x50	3270				
22000		25x50	3690				

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CASE SIZE & MAX RIPPLE CURRENT

Case size : DxL (mm)
Max. ripple current : mA(rms) 105°C 120Hz

Cap. (uF)	V / Item	63		100	
		DxL	R.C.	DxL	R.C.
0.1			→	5x11	6
0.22			→	5x11	9
0.33			→	5x11	11
0.47			→	5x11	13
1			→	5x11	19
2.2			→	5x11	28
3.3			→	5x11	34
4.7			→	5x11	41
10		5x11	55	6.3x11	65
22		5x11	80	6.3x11	100
33		6.3x11	110	8x11.5	140
47		6.3x11	130	10x12.5	180
100		10x12.5	240	10x20	320
220		10x16	390	12.5x25	560
330		10x20	520	12.5x25	690
470		12.5x20	670	16x25	830
1000		16x25	1080	18x40	1580
2200				22x50	2590

All blank voltage on sleeve marking is the same voltage as "→" point to.

Cap. (uF)	V / Item	160		200		250	
		DxL	R.C.	DxL	R.C.	DxL	R.C.
0.47		6.3x11	12	6.3x11	13	6.3x11	14
1		6.3x11	18	6.3x11	19	6.3x11	21
2.2		6.3x11	26	6.3x11	28	6.3x11	31
3.3		6.3x11	32	6.3x11	34	8x11.5	44
4.7		6.3x11	38	8x11.5	48	8x11.5	50
10		8x11.5	65	10x12.5	75	10x16	90
22		10x16	110	10x20	130	12.5x20	160
33		10x20	150	12.5x20	180	12.5x20	190
47		12.5x20	190	12.5x20	210	12.5x25	250
100		12.5x25	310	16x25	340	16x31.5	410
220		16x35.5	540	18x40	660		
330		18x40	750				
470		22x40	1000				
1000		25x50	1730				

Cap. (uF)	V / Item	350		400		450	
		DxL	R.C.	DxL	R.C.	DxL	R.C.
0.47		8x11.5	14	8x11.5	15	10x12.5	15
1		8x11.5	21	8x11.5	21	10x12.5	22
2.2		8x11.5	31	10x12.5	33	10x20	39
3.3		10x12.5	39	10x12.5	41	12.5x20	50
4.7		10x12.5	47	10x16	55	12.5x20	60
10		10x20	85	12.5x20	90	16x25	100
22		12.5x25	150	12.5x25	150	16x31.5	160
33		16x25	180	16x31.5	210	18x35.5	230
47		16x35.5	250	18x35.5	280		
100		18x40	410	20x40	450		
220		22x50	760				

TAPING SPECIFICATION

- Lead taping is designed for automatic insertion equipment.
- Capacitors with case size of 18mm x 35.5mm or smaller are available in taping type.

DIMENSIONS (Ø4~ Ø10)

Item	Symbol	Case Size														Tolerance	Remark
		4 x 5	5 x 5	6.3x5	8 x 5	4 x 7	5 x 7	6.3x7	8 x 7	5 x 11	6.3x11	8 x 11.5	10x12.5	10x16	10x18	10x20		
Lead wire diameter	d	0.45							0.5			0.6					±0.05	
Body height	A	6.0				8.0				12.5		13	14	17.5	19.5	21.5	MAX	
Intervals of bodies	P	12.7															±1.0	
Intervals of punched holes	P_0	12.7															±0.2	
Distance between holes and lead wire	P_1	3.85															±0.7	Fig 1. Fig 4.
		5.35	5.1	5.1			5.35	5.1	5.1			5.1						Fig 2.
		5.6		5.35	5.1	5.1	5.6		5.35	5.1	4.6	5.35	5.1	4.6				Fig 3.
Distance between holes and bodies	P_2	6.35															±1.0	
Distance between lead and lead	F	5.0															+0.8 -0.2	Fig 1. Fig 4.
		2.0	2.5	2.5			2.0	2.5	2.5			2.5						Fig 2. F_1:5.0 $^{+0.5}$
		1.5		2.0	2.5	2.5	1.5		2.0	2.5	3.5	2.0	2.5	3.5				Fig 3. F_1:5.0 $^{+0.5}$
Base tape width	W	18.0															±0.5	
Adhesive tape width	W_0	12.5															MIN	
Deviation between holes and base tape	W_1	9.0															±0.5	
Deviation between adhesive and base tape	W_2	1.5															MAX	
Distance between body bottom and tape center	H	17.5								18.5		20.0	18.5				±0.5	Fig 1. Fig 4.
		17.5								18.5		18.5						Fig 2. Fig 3.
Lead wire clinched height	H_0	16.0															±0.5	
Distance between body top and tape center	H_1	24.5				27.5				32.5			33.0	36.0	38.0	41.0	MAX	
Punched hole diameter	D_0	4.0															±0.3	
Length of not good lead slit	L	11.0															MAX	
Base and adhesive tape thickness	t	0.6															±0.3	
Deviation of body alignment	Δh	0															±2.0	
Deviation of body alignment	Δh_1	0															±1.0	

RoHS

DIMENSIONS (Ø12.5~ Ø18)

Item	Symbol	Case Size							Tolerance	Remark
		12.5 x 20	12.5 x 25	12.5 x 30	16 x 25	16 x 31.5	16 x 35.5	18 x 35.5		
Lead wire diameter	d	0.6			0.8				±0.05	
Body height	A	21.5	26.5	31.5	26.5	33	37.0	37.0	MAX	
Intervals of bodies	P	15.0			30.0				±1.0	Fig 5. Fig 6.
Intervals of punched holes	P_0	15.0							±0.2	
Distance between holes and lead wire	P_1	5.0			3.75				±0.7	
Distance between holes and bodies	P_2	7.5							±1.0	
Distance between lead and lead	F	5.0			7.5				+0.8 -0.2	
Base tape width	W	18.0							±0.5	
Adhesive tape width	W_0	15.0							MIN	
Deviation between holes and base tape	W_1	9.0							±0.5	
Deviation between adhesive and base tape	W_2	1.5							MAX	
Distance between body bottom and tape center	H	16.5			18.5				±0.5	Fig 5. Fig 6.
Distance between body top and tape center	H_1	40.5	45.5	50.5	46.5	53.5	56.5	56.5	MAX	
Punched hole diameter	D_0	4.0							±0.3	
Length of not good lead slit	L	11.0							MAX	
Base and adhesive tape thickness	t	0.6							±0.3	
Deviation of body alignment	Δh	0							±2.0	
Deviation of body alignment	Δh_1	0							±1.0	

Fig 1. (ϕ4~ϕ8)

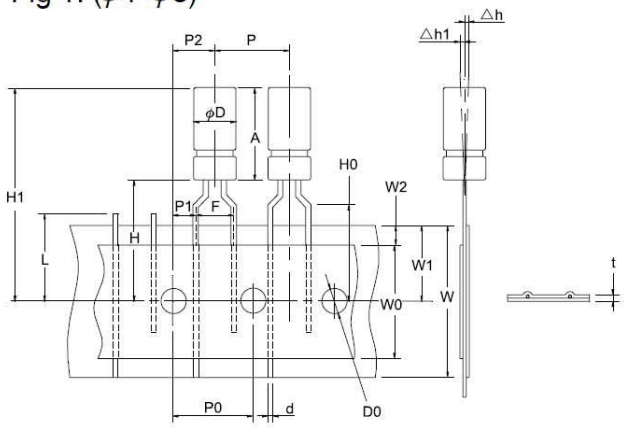


Fig 2. (ϕ4~ϕ5)

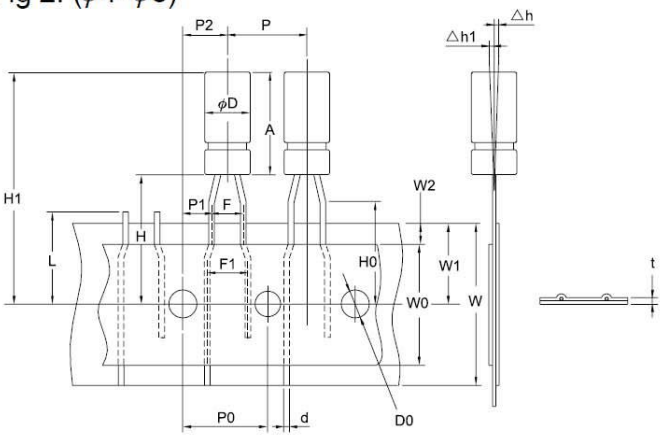


Fig 3. (ϕ4~ϕ8)

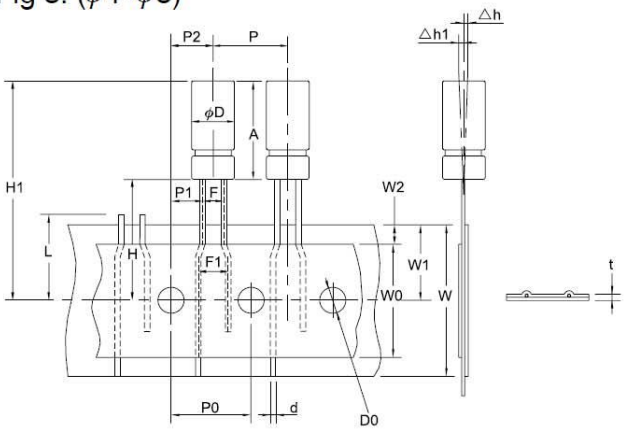


Fig 4. (ϕ10)

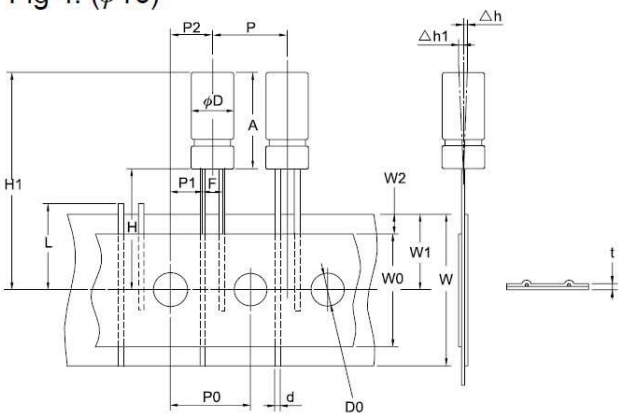


Fig 5. (ϕ12.5)

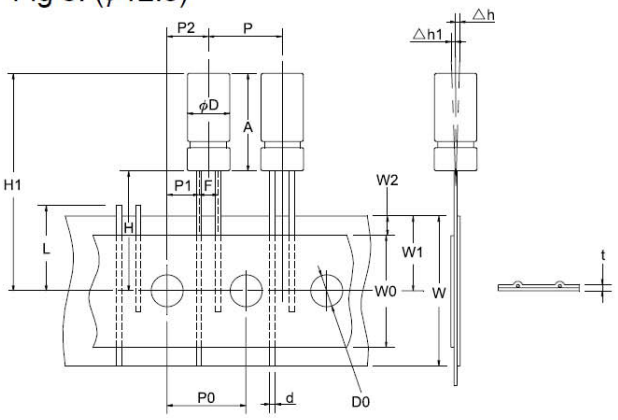
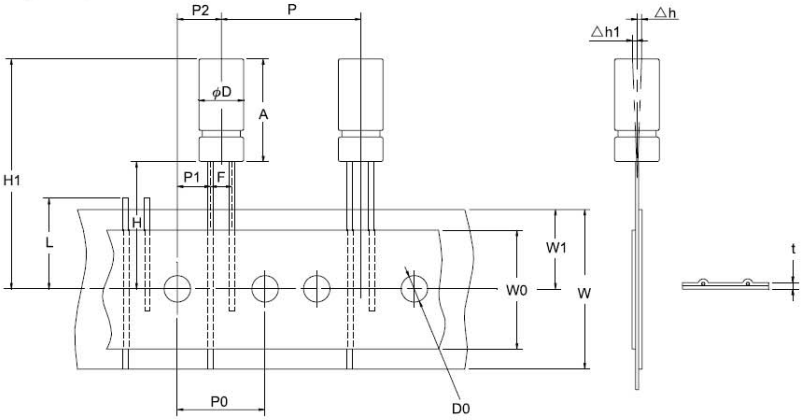


Fig 6. (ϕ16~18)



SOLDERABILITY

Capacitor lead wire is dipping into the oven, and then, dipping in 245±3℃, solder liquid for 3±0.5 seconds, the substance is above the liquid solder 2mm, the dipping lead must be adherent 95% fresh tin at least.

RESISTANCE TO SOLDERING HEAT

Put capacitor lead wire to dip 260±5℃ in solder liquor away the body 2mm, after 10±1 seconds taken out, after 2 hours in room temperature, should do final measurements, the values are following:

(A) Capacitance change: ≦ ±10% of initial value

(B) Dissipation factor: ≦ initial specified value

(C) Leakage current: ≦ initial specified value

(D) Visual: No damage